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NINETEEN TWENTY THREE FISH NOTES FROM SANDY HOOK BAY

No species hitherto unknown from Sandy Hook Bay were definitely recorded therefrom by 1923 collecting. However, the following miscellaneous notes warrant publication.

Carcharhinus obscurus (Le Sueur)? A shark estimated at over 10 ft. and believed to have been this species was seen Aug. 10 in a pound net. The owner of the pound, fearing destruction of his gear, allowed the shark to escape, so certain identification was impossible.

Squalus acanthias Linnæus. Since no collecting trips were made before July 2, there are no data on spring abundance. However, only one individual was seen in the fall (Oct. 18). *Mustelus canis* (Mitchell), on the other hand, was especially abundant all season, pound netters taking several bushels at a lift in early autumn.

Elops saurus Linnæus. Though so uncommon that usually but one or two a season are seen, *Elops* was notably more abundant: it was frequently reported by fishermen in the fall; over two doz. were taken Oct. 19 in one pound alone. A sample catch of thirteen averaged 350 mm. standard length with a 430 maximum and 330 minimum. In weight they averaged 1 3-4 lbs., with a 1 5-8 maximum and 3-4 minimum. All specimens from this inlet that have ever come to the writer's attention have been about this size. Stomach examination showed all empty save one containing a piece of *Ulva* taken no doubt unintentionally.

Stolephorus brownii (Gmelin). Two examples, 105 and 106 mm. standard length, were seined July 26 near the Hook's point. All other Bay examples of both this and *S. mitchilli* (Cuvier and Valenciennes) have been less than 60 mm.

Apletes quadracus (Mitchill). Neither this formerly common species nor the ordinarily less common *Gasterosteus bispinosus* Walbaum were seen at all, though special search was made in their favorite haunt in the "Horseshoe".

Syngnathus fuscus Storer. A gigantic female of this abundant form, 229 mm. standard length, was taken Aug. 10 in the Horseshoe and is preserved in the American Museum of Natural History. Five adults of ordinary size taken in the summer from the same

place averaged 137 mm., about three-fifths as large.

Peprilus paru (Linnæus). This species, known to fishermen as Angelfish, was especially common from July 25 to Sept. 14. A dozen examples taken at one time, Aug. 16, averaged 141 mm. standard length, with a 155 maximum and 135 minimum.

Etropis microstomus (Gill). Though but one example had previously been recorded from the Bay (Sept. 28, 1921)* *Etropis* was common from July 26 to Oct. 19. A seine operated along the beach just inside the Hook frequently yielded many specimens, giving a fair idea of its rate of growth. Those taken the first date averaged 62 mm. standard length; as the season advanced, progressively greater average lengths were obtained, till on the last date they reached 84 mm. This flounder seems very sensitive to handling, dying soon after capture even when kept in a submerged wire basket.

A tabulation based on fall observations, suggestive of the correlation between Bay water temperatures and fauna as associated with equinoctial changes, is given below.

When the temperature fell below 67° Far. the following species disappeared completely; *Sphyrna zygæna* (Linnæus), *Carcharias taurus* Rafinesque and *Peprilus paru* (Linnæus).

When it fell to 58° the following were no longer found; *Raja eglanteria* Bosc, *Tylosurus marinus* (Walbaum), *Poronotus triacanthus* (Peck), *Prionotus carolinus* (Linnæus) and *P. evolans strigatus* (Cuvier and Valenciennes).

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Shortly before it fell to 63° the following appeared somewhat irregularly; *Roccus lineatus* (Bloch), *Centropristes striatus* (Linnæus), *Lagodon rhomboides* (Linnæus), *Caranx hippos* (Linnæus), *Sephanolepis hispidus* (Linnæus) and *Alutera schœpfii* (Walbaum).

Concomittently with its descent to 63° the following species suddenly appeared, in considerable numbers excepting the second and third which are always rather scarce in these waters: *Raja erinacea* Mitchill, *Morone americana* (Gmelin), *Selar crumenopthalmus* (Bloch), *Chilomycterus schœpfii* (Walbaum) and *Microgadus tomcod* (Walbaum).

Some time after 63° had been reached the following appeared in rather straggling manner: *Raja diaphanes* Mitchill, *Raja stabuliformis* Garman, *Elops saurus* Linnæus, *Scomber scombrus* Linnæus, *Myoxocephalus octodecimspinosus* (Mitchill), *Merluccius bilinearis* (Mitchill), *Phycis regius* (Walbaum) and *P. chuss* (Walbaum).

These differences in fauna and temperature split between the collecting dates of Sept. 14 and Oct. 10. Though the temperatures refer only to the surface they indicate the correlation fairly well because of the Bay's extreme shallowness and the resulting comparatively slight temperature difference between surface and bottom. The critical temperature seems about 63°. Reference to notes made the two preceding years showed very similar conditions. The small amount of interdigitation indicated by three years' notes is surprising, for most of the species appeared or disappeared with explosive suddenness, comparatively little gradual change in numbers being apparent. Species that simply increased or decreased in abun-

dance with temperature changes are not mentioned, for the notations of quantity variation made in the field are not detailed enough to be thoroughly trustworthy. But practically no species common enough to be caught regularly if present, fails to react to the falling temperature, of which the above forms serve as index. Several of the fishes that appear with a descending temperature are typical of more southern points; they are notwithstanding constant components of only the autumnal fauna of this region.

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EGGS OF DESMOGNATHUS PHOCA (MATTHES)

NEAR a small branch of Stone Creek, Loudoun County, Va., about 2 miles from Harper's Ferry, William Murphy and I found, Sept. 5, 1923, a 90 mm. female coiled about 17 hatched eggs and 12 larvae. The eggs, 2 1-4 mm. in diameter, were joined together by the external membrane. The larvae had emerged from their free ends, and the egg-mass had somewhat the appearance of a honeycomb. The larvae, 18 to 20 mm. long, differed from those of *fusca* in having a row of well defined light spots each side of the dorsal groove from its beginning to the base of the tail.

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HIME, A NEW GENUS OF FISHES RELATED TO AULOPUS

IN COMPARING the cranium of the fish hitherto known as *Aulopus japonicus* with a picture of the cranium of *Aulopus filamentosus* published by Mr. Regan in his paper on the anatomy and classification of the Teleostean fishes of the order Iniomi,* it became at once apparent that these two forms should be referred to different genera if not to different families.

Aulopus filamentosus has a well developed orbitosphenoid while *Aulopus japonicus* has no ossification at all in the anterior interorbital region. Another illustration of *Aulopus filamentosus*, published by Dr. Vrolik (*Nied. Arch. für Zoöl.* 1873), also shows a large orbitosphenoid. When alcoholic specimens of these forms can be directly compared, other characters of generic value will doubtless be found. *Aulopus filamentosus*, the type of the genus *Aulopus*, is not at hand; *Aulopus japonicus* becomes the type of the new genus *Hime* (the Japanese name, meaning Ladyfish).

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A NEW SPECIMEN OF LEUROGNATHUS MARMORATA

THE rarest and least known of American salamanders is beyond question *Leurognathus marmorata* Moore. Five adults were in collections when the genus and species was described in 1899, and except for a larva, which I referred (and that doubtfully) to it in 1917, nearly 25 years have brought to light no others, notwithstanding the ready accessibility of the type locality and the more recent activity thereabouts of many herpetologists, all of whom have regarded this beast as the greatest of desiderata.

Four adults and the aforementioned questionable larva came from the slopes of Grandfather Mountain; the fifth adult, from the nearby Roan.

It is therefore decidedly pertinent to mention a sixth adult, and, if the larva be reckoned, a seventh specimen, and one which much increases the known range. Miss Wilhelmine and Miss Mathilde Rehm caught a small one Aug. 28 last near Waynesville, N. C., more specifically, "Jones Cove between Clyde and Lake Junaluska on the foothills of Lee Mountain. The place was on the side of a pretty steep mountain on the edge of a wood. There was a little damp streak over which water trickled. Here there were a lot of rocks and tree stumps".

Waynesville is in the Balsams and well south of the high triangular plateau delimited by Roan, Whitetop, and Grandfather, whence came the other examples.

Whereas the former specimens were found associated with *Desmognathus quadrimaculatus*, this one, as the description of the locality would lead one to expect, comes accompanied by 16 *D. fuscus* and 32 *D. phoca* all caught at the same time and place.

This lucky find, upon which the Rehms are to be congratulated, has vomerine teeth, hitherto supposed to be absent in the genus. But inasmuch as this specimen measures only 56 mm., while the smallest previously known (the type, a young male) is 98 mm. long, it would appear that these teeth are lost at an early adult age, and in both sexes, the recently transformed individuals still retaining them. In *Desmognathus*, as is well known, these teeth are lost in the males of most species upon the attainment of sexual maturity; in *D. phoca* very old males sometimes lack them; in *D. quadrimaculatus* they are never lost by the males; and in all the species of the genus they are a permanent possession of the females. The other characters of *Leurognathus*, the very flattened head, the displaced and very small internal nares, are well shown by the Waynesville individual.

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